

CLAIMS

1. A vehicle brake system comprising:  
  
at least two wheel speed sensors for each wheel or wheel group whose speed is to be measured;  
  
an electronic unit for analyzing signals from the wheel sensors to instantaneously select the signals from one of the wheel sensors and determining a reference speed approximating the actual vehicle speed using the selected signals; and  
  
the electronic unit selecting the one wheel sensor as a function of the actual driving condition and at least one defined speed criterion.
2. The vehicle brake system according to Claim 1, wherein there are only two wheel sensors provided for each wheel or wheel group whose speed is to be measured.
3. The vehicle brake system according to Claim 1, wherein for a braked vehicle, the wheel sensor which indicates the second-highest wheel speed is selected.
4. The vehicle brake system according to Claim 1, wherein for an unbraked vehicle, the wheel sensor which indicates the second-lowest wheel speed is selected.

5. The vehicle brake system according to Claim 1, wherein one sensor for each wheel or group of wheels is initially selected using a first speed criterion; and one of the initially selected sensors is finally selected, using a second speed criterion, and used to determine the reference speed.

6. The vehicle brake system according to Claim 5, characterized in that the first and the second speed criterion are in each case an extreme-value criterion.

7. The vehicle brake system according to Claim 5, wherein for a braked vehicle, the wheel sensor with the minimal wheel speed is initially selected from the respectively at least two wheel sensors; and the initially selected sensor having the maximal speed is finally selected.

8. The vehicle brake system according to Claim 5, wherein for an unbraked, the wheel sensor with the maximal wheel speed is initially selected from the respectively at least two wheel sensors; and the initially selected sensor having the minimal speed is finally selected.

9. The vehicle brake system according to Claim 1, wherein the electronic unit is an ABS/ASR control unit.

10. The vehicle brake system according to Claim 9, wherein for an ABS control intervention of the brake pressure control of a wheel or of a

wheel group, a higher speed of the speeds supplied by the at least two assigned wheel sensors is used as a basis when a protection against an erroneous reduction of the brake force has the highest priority.

11. The vehicle brake system according to Claim 9, wherein for an ABS control intervention of the brake pressure control of a wheel or of a wheel group, a lower speed of the speeds supplied by the at least two assigned wheel sensors is used as a basis when a protection against a locking of the wheel or of the wheel group has the highest priority.

12. The vehicle brake system according to Claim 9, wherein for an ASR control intervention of the brake pressure control of a wheel or of a wheel group, a lower speed of the speeds supplied by the at least two assigned wheel sensors is used as a basis when a protection against an erroneous reduction of the traction force at the wheel or the wheel group has the highest priority.

13. The vehicle brake system according to Claim 9, wherein for an ASR control intervention of the brake pressure control of a wheel or of a wheel group, a higher speed of the speeds supplied by the at least two assigned wheel sensors is used as a basis when a protection against a spinning of a wheel or of the wheel group has the highest priority.

14. The vehicle brake system according to Claim 1, including a plausibility checking device which subjects the signals supplied by the wheel speed sensors to a plausibility check; and wherein the electronic unit does not consider sensors which supply signals do not pass the plausibility check.

15. The vehicle brake system according to Claim 1, wherein for a braked vehicle, the wheel sensor with the minimal wheel speed is initially selected from the respectively at least two wheel sensors; and the initially selected sensor having the maximal speed is finally selected.

16. The vehicle brake system according to Claim 1, wherein for an unbraked, the wheel sensor with the maximal wheel speed is initially selected from the respectively at least two wheel sensors; and the initially selected sensor having the minimal speed is finally selected.